

Message Text

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ACTION EB-07

INFO OCT-01 CIAE-00 COME-00 DODE-00 NSAE-00 TRSE-00 EUR-12

ERDA-05 ISO-00 MC-02 /027 W
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FM USMISSION OECD PARIS

TO SECSTATE WASH DC 7135

C O N F I D E N T I A L OECD PARIS 12877

EXCON

E.O. 11652 XGDS1

TAGS: ESTC, COCOM, NO, PL

SUBJECT: NORWEGIAN SEISMIC DATA PROCESSING SYSTEM TO
POLAND - IL 1565

REFS: A. COCOM DOC. (75) 296

B. STATE 93854

1. IN REPLY TO QUESTIONS IN REF. B, NORWEGIAN DEL HAS
SUPPLIED THE FOLLOWING INFORMATION:

"A. THE 27.2 M BITS/SEC. PROCESSING RATE IS A THEORETI-
CAL MAXIMUM SPEED WHERE THE ARRAY PROCESSOR IS IN CON-
TINUOUS OPERATION. FOR A TYPICAL SEISMIC COMPUTATION
THE LENGTH OF THE OPERAND WILL BE OF THE ORDER 1500
SAMPLES, AND THE OPERATOR TYPICALLY 40 POINTS.

A TYPICAL SET-UP TIME FOR ONE SINGLE OPERATION WOULD BE
IN THE RANGE OF 0.8 - 1 MILLISEC.

A TYPICAL SET OF OPERATIONS ON AN EXAMPLE CONSISTING OF
24 SEISMIC TRACES HAS BEEN MEASURED TO HAVE A RATIO OF
2.8 TO 1 BETWEEN ARRAY PROCESSOR TIME AND SET-UP TIME
AND OVERHEAD.

THIS WOULD MEAN AN AVERAGE OF 35-40 PER CENT OVERHEAD,
INCLUDING SET-UP TIME AND AN AVERAGE PROCESSING DATA
RATE OF 19.4 - 20 M BITS/SEC.

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"B. FAST FOURIER TRANSFORM HAS BEEN OFFERED AS AN OP-
TION AND IT HAS NOT BEEN DEVELOPED YET. THE COMPUTATION

TIMES FOR A FAST FOURIER TRANSFORM ARE AS FOLLOWS:

WITH 16 BIT WIDE DATA CHANNEL TO MAIN MEMORY, AND SINE/

COSINE TABLE IN MAIN MEMORY:

1024 POINTS: 140 MILLISECONDS

8192 POINTS: 1400 MILLISECONDS.

WITH THE OPTIONAL 32 BIT WIDE DATA CHANNEL (NOT OFFERED):

1024 POINTS: 70 MILLISECONDS

8192 POINTS: 700 MILLISECONDS.

THE SET-UP TIME WOULD BE THE SAME AS ABOVE, I.E. 0.8 -

1 MILLISEC. THE ARRAY PROCESSOR ITSELF OPERATES ON 32

BIT DATA WORDS.

"C. THE COMPUTATIONAL TIME FOR A SINGLE COMPLEX MULTIP-
PLICATION IS 5 MICROSECONDS, ASSUMING NO ADDITION FOR
READ/WRITE IN MAIN MEMORY."

2. USDEL HOPES THIS INFORMATION WILL MAKE IT POSSIBLE
TO STATE A POSITION SOON.

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Message Attributes

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